



P.B.5818 - Patentlaan 2
2280 HV Rijswijk (ZH)
☎ +31 70 340 2040
TX 31651 epo nl
FAX +31 70 340 3016

Europäisches
Patentamt

Zweigstelle
in Den Haag
Recherchen-
abteilung

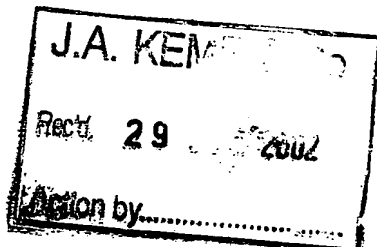
European
Patent Office

Branch at
The Hague
Search
division

Office européen
des brevets

Département à
La Haye
Division de la
recherche

Cresswell, Thomas Anthony
J.A. KEMP & CO.
14 South Square
Gray's Inn
London WC1R 5JJ
GRANDE BRETAGNE



Datum/Date

29.07.02

Zeichen/Ref./Réf.

N.84967

Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°.

02251441.8-1220-

Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire

Shinto Fine Co., Ltd.

COMMUNICATION

The European Patent Office herewith transmits as an enclosure the European search report for the above-mentioned European patent application.

If applicable, copies of the documents cited in the European search report are attached.

☒ Additional set(s) of copies of the documents cited in the European search report is (are) enclosed as well.

The following specifications given by the applicant have been approved by the Search Division:

☒ abstract

☒ title

☐ The abstract was modified by the Search Division and the definitive text is attached to this communication.

The following figure will be published together with the abstract: NONE

REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
P,X	WO 01 38412 A (AVECIA BV ;OVERBEEK GERARDUS CORNELIS (NL); PETERS ANTONIUS CAROLU) 31 May 2001 (2001-05-31) * claims; example C2 *	1-4	C09D125/14 C09D133/08 D21H19/58 //(C09D125/14, 109:08), (C09D133/08, 109:08)
X	EP 0 236 879 A (NAT STARCH CHEM CORP) 16 September 1987 (1987-09-16) * claims; examples 2-10,19 *	1-4	
X	WO 96 19536 A (ZENECA RESINS BV ;PETERS ANTONIUS CAROLUS IDA AD (NL); OVERBEEK GE) 27 June 1996 (1996-06-27) * page 6, line 29 - line 34; claims; examples 3-5 *	1-4	
A	EP 0 331 143 A (MITSUI TOATSU CHEMICALS ;OJI PAPER CO (JP)) 6 September 1989 (1989-09-06) * claims; examples 8,9,C9 *	1-6	
A	DATABASE CA 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; retrieved from STN Database accession no. 130:298036 HCA XP002205881 * abstract * & JP 11 106442 A (NIPPON ZEON CO., LTD., JAPAN) 20 April 1999 (1999-04-20)	1	TECHNICAL FIELDS SEARCHED (Int.Cl.7) C09D D21H
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 July 2002	Examiner DE LOS ARCOS, E
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 02 25 1441

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

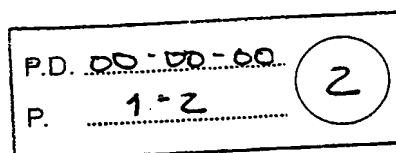
12-07-2002

Patent document cited in search report			Publication date	Patent family member(s)	Publication date
WO 0138412	A	31-05-2001	AU	1701301 A	04-06-2001
			WO	0138412 A1	31-05-2001
EP 0236879	A	16-09-1987	CA	1279417 A1	22-01-1991
			DE	3771093 D1	08-08-1991
			EP	0236879 A2	16-09-1987
			US	4812327 A	14-03-1989
WO 9619536	A	27-06-1996	AT	181933 T	15-07-1999
			AT	172998 T	15-11-1998
			AU	4387596 A	10-07-1996
			AU	4387696 A	10-07-1996
			DE	69505845 D1	10-12-1998
			DE	69505845 T2	29-04-1999
			DE	69510694 D1	12-08-1999
			DE	69510694 T2	21-10-1999
			WO	9619512 A1	27-06-1996
			WO	9619536 A1	27-06-1996
			EP	0799259 A1	08-10-1997
			EP	0799278 A1	08-10-1997
			ES	2133839 T3	16-09-1999
			ES	2123301 T3	01-01-1999
			US	5981642 A	09-11-1999
			US	6258888 B1	10-07-2001
EP 0331143	A	06-09-1989	JP	1229892 A	13-09-1989
			JP	2664396 B2	15-10-1997
			JP	1223170 A	06-09-1989
			JP	8026272 B	13-03-1996
			JP	1223171 A	06-09-1989
			JP	2105433 C	06-11-1996
			JP	8026273 B	13-03-1996
			JP	1229893 A	13-09-1989
			JP	2612586 B2	21-05-1997
			JP	1223172 A	06-09-1989
			JP	2105434 C	06-11-1996
			JP	8026274 B	13-03-1996
			DE	68911554 D1	03-02-1994
			EP	0331143 A2	06-09-1989
			FI	890981 A	03-09-1989
			KR	9202988 B1	11-04-1992
			US	4975473 A	04-12-1990
JP 11106442	A	20-04-1999	NONE		

2000

2001

AN 130:298036 HCA
 TI Manufacture of copolymer dispersions with bimodal particle size distribution, the dispersions, and coating compositions containing them
 IN Inoue, Toshihiro
 PA Nippon Zeon Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C08F246-00
 ICS C08F002-18; C08F002-24; C08F212-02; C08F214-06; C08F218-08; C08F220-00; C08F236-04; C09D157-04; C08F246-00; C08F220-04
 CC 42-7 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 37



FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11106442	A2	19990420	JP 1997-289109	19971006
AB	The dispersions are manufd. by the following 2 steps: (1) suspension polymn. of monomers contg. 0.1-10% ethylenically unsatd. carboxylic acids and 90-99.9% other monomers using oil-sol. polymn. initiators and (2) emulsion polymn. of monomers contg. 0.1-10% ethylenically unsatd. carboxylic acids and 90-99.9% other monomers in the presence of emulsifiers and water-sol. polymn. initiators in the dispersions obtained by the process 1. Thus, a monomer mixt. comprising styrene 50, 2-ethylhexyl acrylate 49, and acrylic acid 1.0 part was polymd. in H2O using AIBN, mixed with an emulsion contg. the monomer mixt. and Na dodecylbenzenesulfonate, and polymd. using (NH4)2S2O8 to give a polymer dispersion contg. 75:25 large (1050-1530 nm) particles and small (120-130 nm) particles. The dispersion was mixed with CaCO3, Na tripolyphosphate, thickener, antifoaming agent, and H2O to give a coating showing solids content 73.8%, viscosity 220 P, and drying time h.				
ST	polymer dispersion manuf suspension emulsion polymn; bimodal particle size distribution polymer dispersion; coating dispersion manuf suspension emulsion polymn; styrene acrylate copolymer dispersion manuf				
IT	Coating materials (dispersion; prepn. of copolymer dispersions with bimodal particle size distribution for coatings)				
IT	Polymerization catalysts (emulsion; water-sol.; prepn. of copolymer dispersions with bimodal particle size distribution for coatings)				
IT	Polymerization (emulsion; prepn. of copolymer dispersions with bimodal particle size distribution for coatings)				
IT	Emulsifying agents (in emulsion polymn.; prepn. of copolymer dispersions with bimodal particle size distribution for coatings)				
IT	Particle size distribution (prepn. of copolymer dispersions with bimodal particle size distribution for coatings)				
IT	Polymerization catalysts (suspension, oil-sol.; prepn. of copolymer dispersions with bimodal particle size distribution for coatings)				
IT	Polymerization (suspension; prepn. of copolymer dispersions with bimodal particle size distribution for coatings)				
IT	9014-90-8, Polyoxyethylene nonylphenyl ether sodium sulfate 25155-30-0 Sodium dodecylbenzenesulfonate				

RL: NUU (Other use, unclassified); USES (Uses)

(emulsifier in emulsion polymn.; prepn. of copolymer dispersions with bimodal particle size distribution for coatings)

IT 78-67-1, Azobisisobutyronitrile 94-36-0, Benzoyl peroxide, uses
7727-54-0, Ammonium persulfate

RL: CAT (Catalyst use); USES (Uses)

(initiator; prepn. of copolymer dispersions with bimodal particle size distribution for coatings)

IT 25085-19-2P, Acrylic acid-2-ethylhexyl acrylate-styrene copolymer
26588-88-5P, Acrylic acid-butadiene-2-ethylhexyl acrylate-styrene
copolymer 56480-51-4P, Acrylic acid-2-ethylhexyl acrylate-methacrylic
acid-styrene copolymer 77496-02-7P, Acrylic acid-butyl acrylate-
2-ethylhexyl acrylate-styrene copolymer

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or
engineered material use); PREP (Preparation); USES (Uses)

(prepn. of copolymer dispersions with bimodal particle size
distribution for coatings)